



# APPRAISAL BULLETIN

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Number 43

## RESIDENTIAL CONSTRUCTION COSTS



### SIX-ROOM BRICK HOUSE

Content: 23, 100 cubic feet  
1, 520 square feet

### DESCRIPTIVE SPECIFICATIONS STANDARD BRICK HOUSE

#### GENERAL CONDITIONS

Materials, Labor, Appliances. Unless otherwise specified herein, the contractor shall provide and pay for all materials, labor, water, tools, equipment, permits, light and power necessary for the completion of the Wenzlick standard six-room brick house. Unless otherwise specified, all materials shall be sound, new and of good quality and all work shall be done in a skillful and workmanlike manner.

#### PREPARATION OF SITE AND EXCAVATION

The contractor shall clear the site of all trees, brush, etc., which come within the area of the proposed building. He shall carefully remove and stack on the plot the top soil for making the lawn.

Excavation shall be of sufficient area and depth to accommodate the building indicated; foundation walls shall be carefully backfilled. Any surplus material not required to grade the plot as designated by plans shall be removed from the premises. Any shortage of materials shall be furnished by the contractor.

Rock excavation is not included in this contract. The contractor will be paid an additional price per cubic foot for rock removal as specified in his bid.

Pumping of other than surface water is not included in the contract price. If spring or other sub-surface water is encountered, the contractor will be paid an additional price per day for keeping the excavation free at the price quoted in his bid or agreed upon between the contractor and the owner.

#### CONCRETE FOOTINGS AND FOUNDATIONS

Footings and foundation walls shall be installed to dimensions indicated on the plans. The mixture shall be one (1) part Portland Cement, three (3) parts clean sharp sand, five (5) parts broken stone, trap-rock, gravel or other suitable clean coarse aggregate, graded in size to pass (cont. on page 408)





RIGHT SIDE ELEVATION



FRONT ELEVATION

(cont. from page 405)

through a 2" screen, adequately mixed with a sufficient amount of clean water in a mechanical batch mixer, placed in the forms within one-half hour thereafter. Substantial and tight forms shall be built on both inner and outer surface foundations of the walls. No part of excavated material shall be used as a form.

**FINISHED CEMENT WORK** - Same as 6-room frame house (no lavatory). See August 1950 Appraisal Bulletin.

**BRICKWORK AND  
MASONRY ITEMS**

The contractor shall provide all brickwork as specified on the plans, comprising the exterior walls of variegated matt brick backed with 5" x 8" x 12" hollow clay tile, chimney, as indicated, with flues lined with terracotta of proper dimensions, fireplace opening lined with fire brick, equipped with cast-iron throat and damper and steel smoke chamber. Cast-iron ash dump and clean-out doors provided as indicated.

The brick for the exterior walls shall be laid in running bond with each fifth course a header course, and laid in cement mortar composed of one (1) part bulk lime, three (3) parts clean sharp sand to which may be added 10 per cent hydrated lime. Chimney exposed above the roof shall be laid with face brick. A chimney cap shall be provided as indicated on plans. Mantel shall be of venetian red mantel brick.



**LATHING AND PLASTERING** All interior walls and ceilings shall be covered with three coats of plaster. Plaster shall be applied directly to the inside surface (hollow tile) of the exterior masonry walls. Interior stud partitions and ceilings shall be covered with three coats of plaster over rock lath (or expanded metal lath) secured to studs (or joists) at each intersection with blued lath nail, corner beads provided for all exterior angles. The scratch coat shall be one (1) part lime putty to two (2) parts sand, with proper proportions of fiber and sand added. The brown coat shall be one (1) part lime putty to three (3) parts sand. The finished coat shall be one (1) part dry gauged plaster to two (2) parts dry hydrated lime. First grade workmanship is required in the application of each plaster coat. No cornice or other ornamental plaster work is contemplated under this contract.

Where tiled walls occur in the bathroom, the contractor shall cover with metal lath and cement mortar scratch.

**INSULATION** Four inches of loose insulating material, rock wool or equal, shall cover entire area of second floor ceiling.

**TILING** This specification provides for tiling bathroom floor and walls; the floor shall be prepared by the carpenter and mason, and the walls by plaster contractor as specified above. The tile setter shall furnish and install 4-1/4 x 4-1/4 glazed commercial-grade wall tile with approved caps, cove bases, angles, etc.; color to be selected by owner. Tile installed to height of 3' 6" in the bathroom and to the ceiling around the bath tub. Bathroom floor shall be 1" or 2" hexagonal white ceramic tile. The contractor shall furnish all setting materials and on completion leave the entire work properly grouted and cleaned.

**ROUGH CARPENTRY AND FRAMING MATERIAL** Rough carpentry and framing material shall be the best grade provided in local practice. It may be yellow pine, white pine, fir or hemlock. All material shall be of sizes indicated, with allowance for milling. All joists, studs and rafters shall be spaced 16" c to c, and one line of cross bridging shall be provided for each floor span exceeding 10 feet.

**UNDERFLOORING AND SHEATHING** Sheathing on roof and all sub-flooring shall be provided as indicated. Material shall be No. 2, dressed and not over 6" wide, laid diagonally for floors and each intersection well secured by two 6d nails.

**ROOFING** Roof shall be asphalt 3-in-1 shingles, weighing not less than 210 lbs. per square.

**PAPER AND FELT** Before placing asphalt shingles the roof surface shall be covered with one course of approved waterproof building felt weighing not less than 15 lbs. per square. Material to be well nailed and lapped at least 2" at all edges. Before placing the finished flooring all sub-flooring shall be covered with 1 course of building paper.

(cont. on page 412)

## BUILDING COSTS OF A SIX-ROOM BRICK HOUSE BUILT IN SAINT LOUIS

## MATERIAL

1. Cost of face brick, common brick, backing tile, blue ironed building stone.
2. Cost of all materials going into mortar, concrete, cement and plaster.
3. Cost of all lumber, flooring, millwork, roofing and paint.
4. Cost of all materials for plumbing, heating, electrical work, sheet metal work, iron work, hardware, tiling and accessories.
5. TOTAL MATERIAL COST.

## LABOR

6. Cost of setting all stones, laying brick and pouring concrete.
7. Cost of labor on lathing and plastering.
8. Cost of carpentry, roofing, flooring, painting and builder's general supervision.
9. Cost of installing plumbing material and fixtures, wiring, heating plant and sheet metal work.
10. Cost of excavation, grading and landscaping.
11. TOTAL LABOR COST.

## OVERHEAD

12. TOTAL OVERHEAD, PROFIT AND OTHER COSTS. This item includes overhead and profit of subcontractors in plastering, roofing, painting, electrical and sheet metal work, general contractor's profit, old age and unemployment (Federal and State), liability and fire insurance, transportation insurance, fire and burglary insurance, and completion bond.
13. TOTAL CONSTRUCTION COST.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	Cu ft. Cost	Sq. ft. Cost
1913	\$ 433	\$226	\$ 960	\$ 613	\$2132	\$ 206	\$230	\$ 579	\$183	\$111	\$ 1425	\$ 664	\$ 4241	18.46	\$2.70
1914	534	237	833	562	2136	313	250	577	183	111	1434	684	4354	18.4	2.80
1915	411	228	619	376	1536	310	250	578	198	111	1444	680	4160	18.0	2.74
1916	468	217	697	416	2255	322	250	580	202	111	1460	680	4410	18.1	2.90
1917	618	266	1051	527	2894	352	250	671	311	111	1590	737	5318	23.6	3.43
1918	609	322	1348	567	3326	368	260	719	313	133	1972	754	5762	24.9	3.70
1919	797	380	1739	659	3973	403	270	775	331	123	1902	830	6314	28.2	4.20
1920	1053	451	2094	1370	4927	443	270	1152	340	160	2273	906	8008	34.7	5.17
1921	791	407	1644	1044	3564	453	290	1152	363	160	2217	847	6728	29.1	4.43
1922	846	357	1477	954	3634	471	300	1080	377	160	2290	1051	6953	29.1	4.57
1923															
1924	867	370	1552	1080	3975	480	300	1168	316	179	2453	1164	7492	32.4	4.93
1925	713	375	1412	1045	3635	635	350	1365	346	197	2503	1295	7817	33.8	5.14
1926	728	358	1462	1091	3638	679	350	1400	385	197	2507	1333	8028	34.7	5.20
1927	717	333	1354	1055	3459	646	300	1398	354	197	2395	1271	7723	33.4	5.00
1928	708	337	1185	1022	3262	641	300	1398	347	197	2383	1271	7723	33.4	5.00
1929												1358	7503	32.5	4.94
1930	692	331	1231	929	3183	621	275	1295	337	197	2325	1306	7394	31.6	4.61
1931	685	331	1269	851	3116	562	280	1265	335	204	2758	1191	7083	30.6	4.65
1932	680	294	1081	809	2994	572	240	1132	334	160	2408	1008	6356	27.1	4.12
1933	638	256	956	764	2614	501	250	1158	322	140	2101	858	5573	24.1	3.67
1934	572	261	918	711	2482	411	135	832	273	123	1774	797	5053	21.9	3.22
1935												771	5148	22.3	3.39
1936	641	289	1160	831	2721	388	142	721	287	118	1656	830	5484	24.6	3.75
1937	675	313	1265	755	3208	380	142	721	287	118	1656	843	5641	25.8	3.92
1938	697	310	1255	768	3075	501	199	823	287	131	1943	943	5941	25.8	3.92
1939	697	310	1255	768	3075	521	210	960	287	131	2157	1023	6222	28.9	4.09
1940	695	300	1478	827	3300	584	211	1118	297	165	2335	1196	6831	29.6	4.49
1941												1143	6238	27.0	4.10
1942	694	301	1311	786	3092	501	182	934	235	131	2003	1143	6238	27.0	4.10
1943	604	294	1244	751	2897	493	245	861	235	131	1965	1230	6082	28.4	4.01
1944												1264	6811	28.6	4.35
1945	638	294	1275	733	2940	607	275	1024	235	168	2307	1264	6811	28.6	4.35
1946	637	284	1314	742	2977	607	275	1024	235	168	2307	1273	6811	28.6	4.35
1947	637	284	1314	742	2977	617	275	933	243	168	2234	1266	6877	28.5	4.33
1948	637	300	1365	742	3234	682	275	954	247	168	2224	1267	6885	29.7	4.52

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(cont. from page 409)

FLASHING - SHEET METAL WORK - Same as 6-room frame house.

MILLWORK - INTERIOR - Same as 6-room frame house.

FINISHED FLOORS - Same as 6-room frame house.

BUILT-IN CABINETS - Built-in kitchen cabinets shall be provided as shown on plans.

BASEMENT STAIRS - Same as 6-room frame house.

FINISHED STAIRS                      Stairs from first to second floor shall be furnished and erected as indicated on the plans properly supported on 2" x 8" carriages and blocking. Risers shall be of pine B or better,  $3/4 \times 7\frac{1}{2} \times 3' 6"$ ; treads of red or white oak,  $11\frac{1}{2} \times 1-1/8 \times 3' 6"$ .

PAINTING - Same as 6-room frame house.

PLUMBING                              This specification contemplates a complete plumbing, drainage and water-supply system for one bathroom and one kitchen.

Sewer Line, Vents and Drainage - Same as 6-room frame house.

Water Supply - Same as 6-room frame house.

Fixtures. There shall be furnished and installed to the rough connections here provided fixtures of quality equal to those specified in the following list: (The following list covers items manufactured by the Independent Plumbing and Heating Company. Contractor is permitted to substitute any equal combination.)

60" Queen sink #457

One Knight pedestal lavatory 20" x 24" over all #224

One Colonial vitreous china toilet with white ivoryette seat #344

One 60" bath tub #123

Hot Water Supply - Same as 6-room frame house.

Alternates - Same as 6-room frame house.

HEATING PLANT                      The contractor shall install one forced circulation combination furnace (24") and blower with automatic humidifier complete with necessary leads and returns made of 26-gauge galvanized steel. The contractor shall guarantee the heating plant to heat the entire living quarters of the house to 70 degrees F. when the outside temperature is 0 degrees F. and the wind velocity not in excess of 30 miles per hour, with not less than a 6-hour firing period.

ELECTRIC WIRING - Same as 6-room frame house.





### 6-ROOM CALIFORNIA BUNGALOW

Content: 12,119 cubic feet  
992 square feet

### DESCRIPTIVE SPECIFICATIONS CALIFORNIA BUNGALOW

#### GENERAL CONDITIONS

**Materials, Labor, Appliances.** Unless otherwise specified herein, the contractor shall provide and pay for all materials, labor, water, tools, equipment, permits, light and power necessary for the completion of the Wenzlick California bungalow. Unless otherwise specified, all materials shall be sound, new and of good quality and all work shall be done in a skillful and workmanlike manner.

#### PREPARATION OF SITE AND EXCAVATION

The contractor shall clear the site of all trees, brush, etc., which come within the area of the building. Excavation shall be of sufficient depth to carry the footings below the frost line.

Rock excavation is not included in this contract. The contractor will be paid an additional price per cubic foot for rock removal as specified in his bid.

#### CONCRETE FOOTINGS AND FOUNDATIONS

Footings shall be 6" x 12" poured concrete and foundation walls shall be 6" poured concrete as indicated on the plans. The mixture shall be one (1) part Portland Cement, three (3) parts clean sharp sand, five (5) parts broken stone, trap-rock, gravel or other suitable clean coarse aggregate, graded in size to pass through a 2" screen, adequately mixed with a sufficient amount of clean water in a mechanical batch mixer. Substantial and tight forms shall be built on both inner and outer surface foundations of walls. No part of excavated material shall be used as a form.

#### FINISHED CEMENT WORK

Concrete entrance slabs and a slab for the future garage shall be 4" poured concrete. A smooth finish coat of one (1) part Portland Cement and two (2) parts sharp clean sand shall be applied to a thickness of not less than one-half inch to the top surface of entrance slabs and the slab for the future garage. Concrete filling shall be provided for tile floor in the bathroom.

## BRICKWORK AND MASONRY ITEMS

The contractor shall provide all brickwork as specified on the plans, comprising chimney, flues lined with flue lining of proper dimensions, fireplace opening lined with fire brick, equipped with cast-iron throat. Outer face of fireplace is to be venetian red mantel brick. Cement mortar shall be composed of one (1) part bulk lime, three (3) parts clean sharp sand to which shall be added 10% Portland Cement. A chimney cap shall be provided as indicated on the plans.

## STUCCO

The surface of the outer walls shall be covered with three (3) coats of one to three (1 to 3) Portland Cement stucco over metal lath. The third coat shall be tinted, color to be selected by the owner.

**LATHING AND PLASTERING** - Same as 6-room frame house.

## INSULATION

Four inches of loose insulating material, rock wool or equal, shall cover entire area of the ceiling.

## TILING

This specification provides for tiling bathroom floor and walls; the floor shall be prepared by the carpenter and mason, and the walls by plaster contractor as specified above. The tile setter shall furnish and install 4-1/4 x 4-1/4 glazed commercial-grade wall tile with approved caps, cove bases, angles, etc.; color to be selected by owner. Tile installed to height of 3' 6" in the bathroom and to the ceiling around the bath tub. Bathroom floor shall be 1" or 2" hexagonal white ceramic tile.

The contractor shall furnish all setting materials and on completion leave the entire work properly grouted and cleaned.

## ROUGH CARPENTRY AND FRAMING MATERIAL

Rough carpentry and framing material shall be the best grade provided in local practice. It may be yellow pine, white pine, fir or hemlock. All material shall be of sizes indicated, with allowance for milling.

Floor Joists . . . . . 2" x 6" - spaced 16" c to c  
Ceiling Joists . . . . . 2" x 4" - spaced 16" c to c  
Roof Rafters . . . . . 2" x 4" - spaced 16" c to c  
Studding in exterior walls  
and interior partitions 2" x 4" - spaced 16" c to c

One line of 2" x 3" cross bridging shall be provided for each joist span over 8'. Framing shall be in accordance with best practice. The entire structure shall be braced and trussed where necessary and securely nailed as required by best practice. Floor joists shall be supported by three 4 x 6 girders resting on fourteen 4 x 4 posts supported by concrete piers as indicated on plans. Sheathing on roof and all sub-flooring shall be provided as indicated. Material shall be number two (No. 2), 1 x 6 or 1 x 8 boards laid diagonally for floors, and each inter-section well secured by two 6d nails.

#### PAPER AND FELT

Before placing exterior metal lath all exterior surface shall be covered with one course of approved waterproof building paper. This material shall be well nailed and lapped not less than 2" at all edges, applied in double thickness along all window and door openings.

Before placing asphalt shingles, the entire roof sheathing shall be covered with waterproof roofing felt weighing not less than 15 lbs. per square. This roof felt shall be well nailed and lapped not less than 2" at all edges.

Before placing the finished flooring, all sub-flooring shall be covered with one course of 15-lb. waterproofed roofing felt well nailed and lapped not less than 2" at all edges.

#### FLASHING - SHEET METAL WORK

Provide and install 16-ounce copper flashing for valleys and angles, chimney counter and step flashed. Provide gutter and downspout (see plans) of 16-ounce copper with necessary fittings, all securely supported by approved hangers and straps.

#### MILLWORK - WINDOW FRAMES AND SASH

Stock window frames and sash shall be provided of the sizes shown on the plans. These shall be double-hung type as indicated, with the exception of two stationary plate glass windows. Sash shall be glazed with double-strength clear glass provided completely with jam-proof (Stanley or equal) pulleys, weights and sash cord. The sash shall be 1-3/8" thick, check-rail type. Exterior door frames shall be 2" clear pine rabbeted to receive 1-3/4" stock doors. Two (2) suitable attic ventilators shall be installed as shown on plans.

INTERIOR MILLWORK - Same as 6-room frame house.

#### FINISHED FLOORS

Finished floors shall be of clear select red oak 2-1/4" x 13/16", to be placed over all floor areas except the bath. Flooring shall be laid tight and even and nailed every 16". All oak flooring shall be scraped or sanded and completed ready for the painters.

#### CABINETS

Built-in kitchen cabinets shall be provided as indicated in the plans.

PAINTING - Same as 6-room frame house.

#### PLUMBING

This specification contemplates a complete plumbing, drainage and water-supply system for one bathroom and one kitchen.

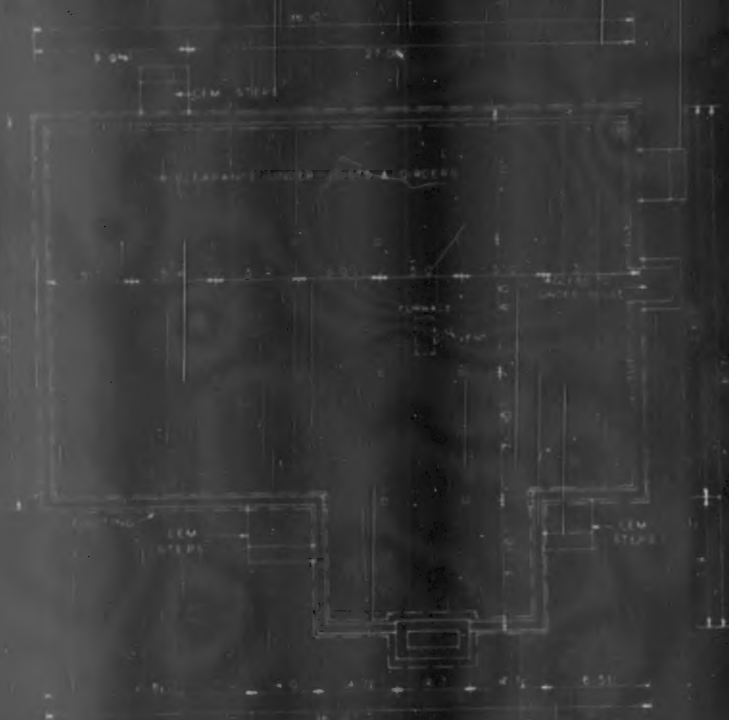
Sewer Line, Vents and Drainage - Same as 6-room frame house.

Water Supply - Same as 6-room frame house.  
(cont. on page 420)

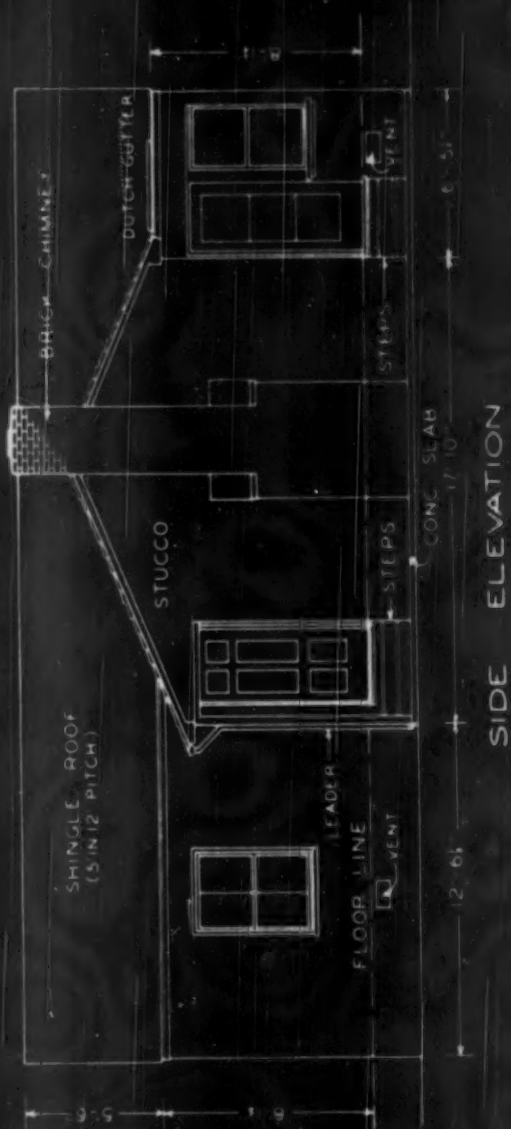


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(cont. from page 415)

Fixtures. There shall be furnished and installed to the rough connections here provided fixtures of quality equal to those specified in Crane or Kohler catalogues, or approved by the owner. They shall include one pedestal lavatory, one vitreous china toilet, one 60" bath tub with shower. (Sink provided for in Cabinets.)

Hot Water Supply. A domestic heater is not provided under these specifications. It will be provided under separate order on selection by the owner and cost of connecting and placing the device in operation shall be included under this original plumbing contract.

Alternates. If local building codes and practice do not permit the use of copper tubing and sweat-joint fitting for water supply, the contractor shall furnish genuine wrought-iron galvanized pipe in place thereof. However, where substitutions are made, pipe one size larger than specified shall be provided.

#### HEATING PLANT

Heating plant shall be dual gas floor furnace of sufficient size to keep the entire house heated to 70 degrees F. when the outside temperature is 0 degrees F. and the wind velocity not in excess of 30 miles per hour. Installation shall be as indicated on the plans.

#### ELECTRIC WIRING

It is the purpose of this specification to describe a complete electrical installation. All material shall be of standard make and of quality and installed as required by the National Board of Fire Underwriters. All outlets shall terminate in approved metal boxes. Switches shall be of toggle type. All outlets other than for lighting fixtures and switches shall be equipped with standard duplex connections. Wiring to outlets shall be of approved-size BX cable of sufficient size to carry the circuit load.

Each circuit shall be switched and fused and extended to a central panel board. This contractor shall terminate all circuits at an appropriate meter and fuse board.

Connection from meter panel to public service lines is not included in this contract, nor are electrical fixtures and appliances provided.